Name: Key
Date:

Unit 2 Review

I. Solving Equations

1. $x - 4 = 30$

$+4 \quad +4$

$x = 34$

$\frac{2}{7} \cdot \frac{7}{2} t = -\frac{10}{1} \cdot \frac{5}{2}$

$t = \frac{-50}{2}$

$t = -25$

3. $6x + 4 = 20 - 2x$

$+2x \quad +2x$

$8x + 4 = 20$

$-4 \quad -4$

$\frac{8x}{8} = \frac{16}{8}$

$x = 2$

4. $5x + 4 = 2x + 17$

$-2x \quad -2x$

$3x + 4 = 17$

$-4 \quad -4$

$\frac{3x}{3} = \frac{13}{3}$

$x = \frac{13}{3}$ or $4\frac{1}{3}$

5. $5(x + 2) = 25$

$5x + 10 = 25$

$-10 \quad -10$

$\frac{5x}{5} = \frac{15}{5}$

$x = 3$

6. $2(2x + 10) = 40$

$4x + 20 = 40$

$-20 \quad -20$

$\frac{4x}{4} = \frac{20}{4}$

$x = 5$

7. $4(5x - 3) = 7(2x + 3)$

$20x - 12 = 14x + 21$

$-14x \quad -14x$

$6x - 12 = 21$

$+12 \quad +12$

$6x = 33$

$x = \frac{33}{6}$ or $5\frac{1}{2}$

8. $7n - 3(6 + 2n) = 3(n - 8)$

$7n - 18 - 6n = 3n - 24$

$n - 18 = 3n - 24$

$-n \quad -n$

$-18 = 2n - 24$

$+24 \quad +24$

$\frac{6}{2} = \frac{2n}{2}$

$3 = n$

II. Solving Proportions

9. $\frac{3}{4} \times \frac{t+3}{t-8}$

$3(t - 8) = 4(t + 3)$

$3t - 24 = 4t + 12$

$-3t \quad -3t$

$-24 = t + 12$

$-12 \quad -12$

$-36 = t$

10. $\frac{16}{3-w} \times \frac{8}{w+5}$

$16(w + 5) = 8(3 - w)$

$16w + 80 = 24 - 8w$

$+8w \quad +8w$

$24w + 80 = 24$

$-80 \quad -80$

$\frac{24w}{24} = \frac{-56}{24}$

$w = -2.\overline{3}$

11. $\frac{2x-5}{3} \times \frac{3x-8}{5}$

$5(2x - 5) = 3(3x - 8)$

$10x - 25 = 9x - 24$

$-9x \quad -9x$

$x - 25 = -24$

$+25 \quad +25$

$x = 1$

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III. Solving One Variable Word Problems

12. Nick opens a savings account with \$50. Each week after, he deposits \$15. In how many weeks will he have saved \$500?

$50 + 15x = 500$

$-50 \quad -50$

$15x = 450$

$\frac{15x}{15} = \frac{450}{15}$

$x = 30$

13. Ben rents a car for one day. The charge is \$20 plus the \$0.12 per mile. He wants to spend exactly \$80. How many miles can he drive?

$20 + .12x = 80$

$-20 \quad -20$

$.12x = 60$

$\frac{.12x}{.12} = \frac{60}{.12}$

$x = 500$

14. Joe went to the hobby shop and bought 2 model sports cars at \$8.95 each and some paints. If he spent a total of \$23.65, what was the cost of the paints?

two

$2(8.95) + 2(x) = 23.65$

$17.90 + 2x = 23.65$

$-17.90 \quad -17.90$

$\frac{2x}{2} = \frac{5.75}{2}$

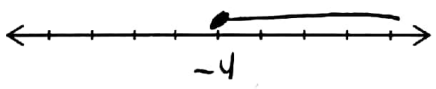
$x = 2.88$

IV. Solving Inequalities

- Graph and write the interval notation for the inequalities

15. $x \geq -4$

$[-4, \infty)$



16. $p \leq 11$

$(-\infty, 11]$

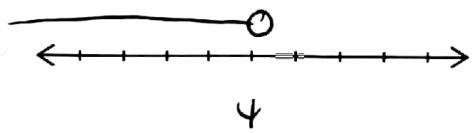
- Solve, graph, and write the interval notation for the inequality

17. $n + 10 < 14$

$-10 \quad -10$

$n < 4$

$(-\infty, 4)$

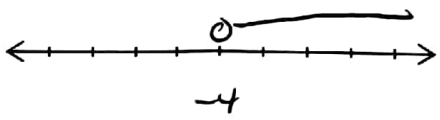


18. $2x > -8$

$\frac{2x}{2} > \frac{-8}{2}$

$x > -4$

$(-4, \infty)$



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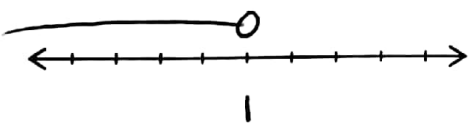
19. $-2x - 8 > -10$

$+8 \quad +8$

$\frac{-2x}{-2} > \frac{-2}{-2}$

$x < 1 \qquad (-\infty, 1)$



20. $-4x + 2x + 10 \leq 2(2x + 17)$

$-2x + 10 \leq 4x + 34$

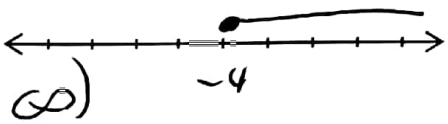
$-4x \quad -4x$

$-6x + 10 \leq 34$

$-10 \quad -10$

$\frac{-6x}{-6} \leq \frac{24}{-6}$

$x \geq -4 \qquad [-4, \infty)$



V. Solving Word Problems

21. Keith and Michelle went out to dinner. The total cost of the meal, including the tip, came to $53.70. If the combined tip came out to $9.60, and each friend spent an equal amount, how much did each friend pay not including the tip?

a. Write the equation

$2x + 9.60 = 53.70$

$-9.60 \quad -9.60$

b. Solve the equation

$\frac{2x}{2} = \frac{44.10}{2}$

$x = 22.05$

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22. Adrian works in New York City and makes $42 per hour. She works in an office and must get her suit dry cleaned every day for $75. If she wants to make more than $260 a day, *at least* how many hours must she work?

a. Write the inequality

$42x - 75 > 260$

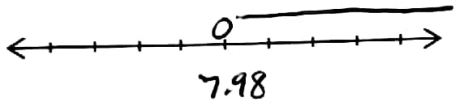
$+75 \quad +75$

b. Solve the inequality

$\frac{42x}{42} > \frac{335}{42}$

$x > 7.98$

c. Graph the inequality



d. Write the inequality interval

$(7.98, \infty)$

VI. Solving Literal Equations

23. $6 = mx + b$ for x

$-b \quad -b$

$\frac{6-b}{m} = \frac{mx}{m}$

$x = \frac{6-b}{m}$

24. $x = \frac{4-k}{6}$, 6 for k

$6x = 4 - k$

$-4 \quad -4$

$6x - 4 = -k$

$-1 \quad -1$

$-6x + 4 = k$

25. $cx - d = a(x - y)$ for y

$\frac{cx-d}{a} = \frac{a(x-y)}{a}$

$\frac{cx-d}{a} = x - y$

$-x \quad -x$

$\frac{cx-d}{a} - x = -y$

$-1 \quad -1$

$-1\left(\frac{cx-d}{a} - 1\right) = y$

I don't like this one 4